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Natacha Vieira, Nelson Saibo,
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Sociedade Portuguesa de Fisiologia Vegetal

“XIII Congresso Luso-Espanhol de Fisiologia Vegetal”
- Abstract Book -

Natacha Vieira, Nelson Saibo, M. Margarida Oliveira (Eds.)
Sociedade Portuguesa de Fisiologia Vegetal
ITQB - Oeiras, Portugal (Julho, 2013)

Impressão e Acabamento:
Dossier – Comunicação e Imagem, Lda.
www.dossier.com.pt

Depósito Legal nº 362078/13

S2/P43: THE NITRATE-AFTERRIPENING CROSSTALK IS INVOLVED IN THE TESTA RUPTURE OF *SISYMBRYUM OFFICINALE* SEEDS

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The loss of seed dormancy can occur by exposing the seed at low moisture storage conditions (afterripening; AR). Since a positive GA:ABA ratio play a key role in the reactivation of germination of non-dormant seeds, it seems obvious that a remarkable effect of AR is the decreasing of both ABA levels and sensitivity, as well as the increment of GA synthesis and sensitivity [1]. ABA levels are regulated by control both of its biosynthesis thorough the 9-cis-epoxycarotenoid dioxygenase (NCED) encoding genes and its catabolism mediated mainly by ABA-8'-hydroxylases (CYP707A). On the other hand, the last steps of the GA biosynthesis pathway should be involved to control its levels. Namely, GA20ox and GA3ox catalyzing the biosynthesis of active GA and GA2ox which catalyzes the GA inactivation. The presence of nitrate accelerates the sensu stricto germination of non-AR *S. officinale* seeds [2]. Here, we demonstrate that in AR seeds nitrate also alters the expression pattern of key genes involved in ABA and GA metabolism and signalling (i.e. *SoNCED6*, *SoNCED9*, *SoCYP707A2*, *SoABI5*, *SoGA3ox2*, *SoGA20ox6*, *SoGA2ox6* and *SoRGL2*). These results suggest that the nitrate signalling is also operative during imbibition of AR *S. officinale* seeds.

[1] Holdworth *et al.* (2008). *New Phytol.* 179: 33-54

[2] Carrillo-Barral *et al.* (2013). *Physiol. Plant.* doi: 10.1111/j.1399-3054.2012.01720.x

Acknowledgments: Project funding by Spanish MICINN (CGL2009-11425) and (BFU2009-11809). N. C-B is financed by a pre-doctoral fellowship from Xunta de Galicia (PRE/2012/323) and R. I-F by a Juan de la Cierva (JCI-2010-07909).